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10/559,545	03/28/2006	Jan Berg	PAT-01093	9152
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Mary E. Golota Cantor Colburn LLP 201 W. Big Beaver Road Suite 1101 Troy, MI 48084			GEISEL, KARA E	
			ART UNIT	PAPER NUMBER
			2877	
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			10/20/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/559,545	Applicant(s) BERG ET AL.	
	Examiner KARA E. GEISEL	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,13-15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,13-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Arguments

The drawings filed June 30th, 2008 have overcome the drawing objection. This objection has been withdrawn.

The amendment to the specification, filed June 30th, 2008, has overcome the specification objection. This objection has been withdrawn.

The amendments to the claims, filed June 30th, 2008, have overcome the objections and rejections under 35 U.S.C. 112, second paragraph, set forth in the previous Office Action. These rejections and objections have been withdrawn. However, the amendment has also brought up new issues, which are discussed below.

The amendments filed June 30th, 2008, have not overcome the double patenting rejection. Since no terminal disclaimer has been filed, this rejection has been maintained below.

Upon further consideration, a new rejection based on art is made below.

Drawings

The drawings were received on June 30th, 2008. These drawings are accepted.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 7, the reflectance sensor is claimed as comprising a compensation filter, an IR blocking filter, a condenser, and a scattering disk, a protective tube, **and** a precise spacing element.

However, “a combination thereof” of these elements is then claimed. It appears applicant was trying to

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claim that that the sensor could comprise one or a combination of these elements. However, as it is claimed, it is unclear and indefinite. Clarification is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3-7, and 13-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 29-34, and 37-40 of copending Application No. 10/596,388 (see US Pubs 2008/0019887). Although the conflicting claims are not identical, they are not

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patentably distinct from each other because claim 1 of the current application is broader in scope than claim 37 of '388 and therefore can be read from claim 37. Furthermore, although claim 1 discloses that the analysis cell is removable, this feature is disclosed in claim 38 of '388, and therefore, it would have been obvious to one of ordinary skill at the time the invention was made to include this feature into claim 37 as it is disclosed, and further it would allow more versatility in the cleaning and types of measurements the sensor could perform.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In regards to claim 1, claim 37 (dependent on claim 29) of claim '388, discloses a reflectance sensor, comprising an optical unit (claim 29, line 3) comprising a light source comprising a lamp (line 4), and a fiber-optic system comprising fibers comprising an optical waveguide (line 5) and a reference waveguide fiber (lines 6-7), a sample analysis unit (line 8) comprising a measuring window (line 9), and a removable sample analysis cell (lines 10-11 and claim 38), a system control unit (line 24) comprising a detector for recording measured data and an evaluation device connected thereto (lines 24-26), wherein the optical unit is disposed on a first side of the measuring window and the sample analysis cell is disposed on a second side of the measuring window opposite the first side (lines 12-15), wherein the analysis cell is pressed against the measuring window to form a gap between said measuring window and said analysis cell, wherein the gap is traversed by a sample to be measured in the form of a liquid pigment preparation (lines 15-21), the sample being sheared considerably as it traverses the gap (claim 37), wherein the optical waveguide fiber extends from the light source the measuring window and from the measuring window to the detector (lines 27-30), to generate a measured reflectance signal (line 30), further wherein the reference waveguide fiber extends directly from the light source to the detector or from the measuring window to the detector to produce a reference signal (lines 30-34).

In regards to claim 3, claim 30 of '388 has a one-to-one correspondence.

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In regards to claim 4, claim 31 of '388 has a one-to-one correspondence.

In regards to claim 5, claim 32 of '388 discloses that the optical waveguide fiber can have a diameter of 100, 200, 400, 600 or 800 μm .

In regards to claim 6, claim 33 of '388 discloses that a diameter of the reference waveguide fiber is equal to or smaller than a diameter of the optical waveguide fiber.

In regards to claim 7, claim 34 of '388 discloses that the sensor further comprises a compensation filter downstream of the lamp, that linearizes a spectrum from the lamp such that a difference between a highest and lowest intensity of the light beam is at most a factor 4 (lines 3-7), an IR blocking filter, a condenser and a scattering disk arranged downstream of the lamp (lines 8-9 and 16-18), a protective tube comprising the optical waveguide fiber and a supporting frame that supports the optical waveguides (lines 10-12), a precise spacing element with an incorporated scattering disk comprising the reference waveguide fiber, and attenuated in a defined manner (lines 13-15) or a combination thereof (line 2).

In regards to claim 13, claim 39 of '388 has a one-to-one correspondence.

In regards to claim 14, claim 40 of '388 has a one-to-one correspondence.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-4, 7, 15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Martino et al. (US Pubs 2002/0149773), newly cited.

In regards to claims 1 and 15, Martino discloses a reflectance sensor (figs. 1-2 and 9) comprising an optical unit comprising a light source comprising a lamp (26 ¶ 46), and a fiber-optic system

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comprising fibers comprising an optical waveguide fiber (310, 306), and a reference waveguide fiber (30), a sample analysis unit (fig. 3), comprising a measuring window (64) and a removable sample analysis cell (42 and ¶ 55), and a system control unit comprising a detector for recording measured data (24 or 18); and an evaluation device connected thereto (16); wherein the optical unit is disposed on a first side of the measuring window (fig. 9, 310 and 306) and the sample analysis cell is disposed on a second side of the measuring window opposite the first side (fig. 3 shows the sample cell 50-52 on opposite side of window 64 from optical unit 76 which would correspond to fig. 9's 310 and 306), wherein the analysis cell is pressed against the measuring window to form a gap between the measuring window and the analysis cell (¶ 53), wherein the gap is traversed by a sample to be measured in the form of a liquid pigment preparation (¶ 2), the sample being sheared considerably as it traverses the gap (¶ 16) wherein the optical waveguide fiber extends from the light source to the measuring window (310) and from the measuring window to the detector (via 306), to generate a measured reflectance signal, and further wherein the reference waveguide fiber (30) extends directly from the light source to the detector or from the measuring window to the detector to produce a reference signal (¶ 47). Furthermore, Martino discloses a method comprising forming a sample stream with a defined thickness (via 42), the sample consisting of the liquid pigment preparation (¶ 2); irradiating the sample stream with electromagnetic radiation emitted by the light source, the electromagnetic radiation interacting with the sample and some of the radiation being reflected diffusely following interaction with the sample (via 26; ¶ 61, some light will inherently be reflected diffusely); receiving and measuring the diffusely reflected radiation as the measured reflectance signal (via 18), receiving and measuring electromagnetic radiation emitted by the light source with does not interact with the sample as the reference signal (¶ 47), the measured reflectance signal and the reference signal being measured simultaneously (¶ 71).

In regards to claim 3, the lamp is selected from the group consisting of LEDs, gas discharge lamps and lamps with incandescent filaments (¶ 46).

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In regards to claim 4, the lamp has an integrated shutter (§ 48).

In regards to claim 7, the sensor further comprises at least one or a combination of the following features: a compensation filter downstream of the lamp, which linearizes the spectrum of the lamp in such a way that the difference between the highest and lowest intensity of the light emitted by the lamp is a maximum of a factor 4; an IR blocking filter, a condenser and a scattering disk, downstream of the lamp; a protective tube comprising the optical waveguide fiber and a supporting frame that supports the optical waveguide fiber; or a precise spacing element with an incorporated scattering disk comprising the reference waveguide fiber, and attenuated in a defined manner (§ 46).

In regards to claim 17, measuring of the reflectance of the liquid pigment preparation is measured during a process stage in the production of the liquid pigment preparation, further processing of the liquid pigment preparation or use of the liquid pigment preparation, wherein said process stage comprises quality control during the dispersion of pigmented coatings and pigment pastes, quality assessment during coating production, controlling a metering system during the formulation of coatings by mixing various liquids, automatically controlling color adjustment by means of tinting during coating production, matching the color of the coating in a coating system which has a metering system for colored pastes and monitoring subsequent color changes as a result of ageing or shear stressing (§ 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

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owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5-6, 8-9 and 13-14 are rejected under 35 U.S.C. 103(a) as being obvious over Martino et al. (US Pubs 2002/0149773) in view of well known practices in the art.

In regards to claims 5-6, Martino discloses the sensor as described above. Martino is silent to the size of the fibers. However, the size of the fibers is merely a design choice and it would have been obvious to one of ordinary skill in the art to try fibers of different sizes, in order to find the most cost-effective option while still getting the best measurements. Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have the optical waveguide fiber have a diameter of 100, 200, 400, 600 or 800 μm or have the diameter of the reference waveguide fiber equal to or smaller than the diameter of the optical waveguide fiber as a matter of design choice and in order to find the most cost-effective option while still getting the best measurements.

In regards to claim 8, Martino discloses the sensor as described above. Martino is silent to what the windows are made of and the dimensions of the window. However, the Examiner takes Official notice that the type of material, and the dimensions of the window are merely design choices, and furthermore it would have been obvious to one of ordinary skill in the art to try a 1-12 mm thick and 10-80mm in diameter flat plane plate of glass or semi-precious stone or diamond with a reasonable expectation of success as the window in order to find a good measurement window for this type of environment. Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have the window of Martino be a 1-12 mm thick and 10-80mm in diameter flat plane plate of

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glass or semi-precious stone or diamond as a matter of design choice and in order to have an appropriate size and strength for a window in this type of measurement system.

In regards to claim 9, Martino discloses the sensor as described above. Martino is silent to the dimensions of the gap, although it is disclosed that the height of the gap is variably adjustable between .05 and 5mm (§ 53). The Examiner takes Official Notice that the dimensions of the gap are merely a design choice, and furthermore, it would have been obvious to one of ordinary skill in the art to try a length of 2-15mm and a width of 2-40mm for the gap with a reasonable expectation of success in order to have an appropriate size gap for liquid pigmentations that would not get easily clogged with the sample. Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have the dimensions of Martino's gap have a length of 2-15mm and a width of 2-40mm in order to have an appropriate size gap for liquid pigmentations that would not get easily clogged with the sample.

In regards to claim 13, Martino discloses the sensor as described above. Martino is silent to the system control unit having detectors in the form of fiber-optic monolithic diode line sensors which permit a resolution of at least 15 bits. However, the detectors can be any type desired. The examiner takes Official notice that fiber-optic monolithic diode line sensors are well known in the art, and offer a more compact, and rugged sensor. Therefore, it would have been obvious to one of ordinary skill in the art to use a fiber-optic monolithic diode line sensor as the detector of the combined system in order to have a detector which is more compact and rugged.

In regards to claim 14, Martino discloses the sensor as described above. Martino discloses that all the units of the reflectance sensor are accommodated in a common housing (fig. 1, 12). However, Martino is silent to comprising ventilation and thermostat-regulated heat dissipation. The examiner takes Official Notice that ventilation and thermostat-regulated heat dissipation are very well known in the art, and are used in housings to control the temperature within the housing in order to protect the delicate measurement sensor. Therefore, it would have been obvious to one of ordinary skill at the time the

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invention was made to include in the common housing of the combined device ventilation and thermostat-regulated heat dissipation in order to control the temperature within the housing in order to protect the delicate measurement sensor.

Allowable Subject Matter

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 10, the prior art of record, taken alone or in combination, fails to disclose or render obvious a reflectance sensor wherein the sample is sheared by a pressure drop of 0.1 to 3 bar in the gap over a length of 1 to 15 mm from an entry point to an exit point of the sample, in combination with the rest of the limitations of claim 10.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Steenhoek et al. (US Pubs 2002/0131043).

Steenhoek discloses a sample analysis unit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARA E. GEISEL whose telephone number is **571 272 2416**. The examiner can normally be reached on Monday through Friday, 10am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Kara E Geisel/
Primary Examiner,
Art Unit 2877**

October 16, 2008